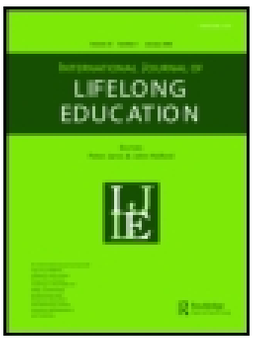

International Journal of Lifelong Education

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/tled20

Innovation, personalised education and Little Red Riding Hood

Jose Penalva

To cite this article: Jose Penalva (2020): Innovation, personalised education and Little Red Riding Hood, International Journal of Lifelong Education, DOI: 10.1080/02601370.2020.1786178

To link to this article: https://doi.org/10.1080/02601370.2020.1786178

Published online: 02 Jul 2020.

Submit your article to this journal

View related articles

View Crossmark data

Full Terms & Conditions of access and use can be found at
https://www.tandfonline.com/action/journalInformation?journalCode=tled20

INTERNATIONAL JOURNAL OF LIFELONG EDUCATION
https://doi.org/10.1080/02601370.2020.1786178

Routledge
Taylor & Francis Group

ARTICLE

Check for updates

Innovation, personalised education and Little Red Riding Hood

Jose Penalva

Freelance Professor and Independent Consultant

ABSTRACT

In the context of the main challenges that educational systems across the world are facing, the paper analyses the conception of personalised education in prevalent approaches to lifelong-learning, as per OECD. It shows that, at heart, it fails to provide an adequate framework when it comes to achieve leadership, innovation and self-realisation. The current approach, on one hand, emphasises personalised education, highlighting principles such as student-centred, self-directed, innovation and diversification; on the other, when it comes to real life (as in academic programmes, practices and experiences), it over-emphasises the social dimension and accordingly diminishes the personal, individual dimension. Next, the paper suggests a different perspective for a personalised education, so as to reinforce leadership, innovation and self-realisation. In doing so, it brings back key educational issues underlying Western education, namely: education is not only about 'building a work-force and citizenship education' (i.e. social dimension) but mainly and basically about 'personal education'. The paper finally indicates how this approach is more consistent and useful in our time.

KEYWORDS

Personalised education; lifelong-learning; education for life; education of character; innovative leadership

Introduction: The situation

Educational systems across the world are facing complex and ambiguous challenges. There are economic challenges: innovation in a global market; productivity in a world of volatility and uncertainty; employability in a context of over-emphasised academic curriculum, etc. Social issues are not less relevant: there is a growing demand of social inclusion and education for all, social identity and sense of belonging in a context of cultural disorientation, dignity and freedom.

On one hand, there are trends of socio-economic success in today's competitive world. First, economic stagnation occurs not for high-tech innovation at the frontier of the industry, but for the lack of spread of innovation from the frontier to the rest of the industry. Productivity growth and economic success depend very much on catching up with cutting-edge innovation and spreading it to the rest of the industry. Second, productivity growth is superior in industries and organisations that are oriented to the rest of the world. Internationalisation creates the logic of constant learning, and constant upgrading. Third, innovation, growth and prosperity occur in local or regional hubs working in close partnerships, open to the international market (McKindsey&Company, 2019, 2018; Shanmugaratnam, 2017a)

This evidence poses a challenge to educational systems and learning organisations across the world. First, organisations and employers need people with skills. But skills do not last long, as technology and knowledge change quickly. Therefore, institutions need to invest in people at different points of their career. Organisations need to upgrade the skills of every worker.[1] A personalised view of education is then crucial. This is the most important socio-economic

CONTACT Jose Penalva jpb4243@gmail.com Freelance Professor and Independent Consultant Freelance

© 2020 Informa UK Limited, trading as Taylor & Francis Group

strategy for societies in our time (McKindsey&Company, 2017). Second, educational institutions need to discover innovation to speed up the learning that has happened at the frontier in order to spread innovation to the rest of the industry. This endeavour is about building communities of learning (collaboration), about social relationship (partnership), and involves, then, an ecological approach (Jones & Harvey, 2017). The social dimension of education is, therefore, crucial as well.

On the other hand, a number of socio-cultural issues increasingly become significant to education. Firstly, we see across the world demonstrations of young protesters against the government, demanding dignity and freedom. This indicates that this new generation wants new forms of democracy where their voices can be heard (sociological analysis: Castells, 2019). Secondly, segregation, social division and social agitation surge issues around the world (Markovitz, 2019; Zucman, 2019). Ethnic strife is a global phenomenon today, and conflicts in one place spread quickly internationally. This is a complex socio-political issue, and it is getting worse over time (Shanmugaratnam, 2017b). Thirdly, the new generation has lost confidence in society and life. They believe they will not do better than their parents (McKindsey&Company, 2020; Stokes 2017). This is a global trend. "In polling last year just 36% of Germans, 24% of Canadian and 9% of the French thought that the next generation would be better off than their parents. … A recent study found that, in 1999–2013, America's most prestigious universities admitted more students from the top 1% of households by income than from the bottom 50%. In 1980–2015 university fees in America rose 17 times as fast as median incomes. … This creates two classes: the doers and the done-to, the thinkers and the thought-for, the policymakers and the policytakers." (The Economist, 2018). Fourthly, social tech-platforms have become real educators of people. They are becoming not just the main source of information on relevant socio-political issues, but also the main source of knowledge. The fact is that people buy information and knowledge offered on these platforms because they justify or reinforce their own beliefs and ideas.[2] For example, fake-news is believed because it connects with previous assumptions about the world (worldviews) or previous feelings about the reality (sensibility). This makes youngsters particularly vulnerable in our time (Lazer et al., 2018).

This poses a challenge to educational systems and learning organisations worldwide. It all comes down to the question of how they will address the demand of personalised education.

Prevailing approach to lifelong-learning

Educational systems of the OECD are based on the idea of 'lifelong learning' (OECD, 1996, 2004, 2005, 2015; UNESCO, 2016). Yet there are different frameworks and understandings of the set of competencies involved in lifelong-learning. A comparative analysis of international frameworks for the 21st Century Education shows some agreement on some basic required competences (Darling-Hammond, 2015; Luna, 2015; Voogt & Pareja, 2012). ICT competencies are at the core (information literacy, technological literacy, ICT literacy); additionally collaboration, socio-cultural awareness (including citizenship), communication; and abilities such as creativity, critical thinking, problem-solving scenario, innovation. Thus, lifelong-learning is not fundamentally about 'what to teach', but 'how-to-learn'.

With regard to understand learning and curriculum, prevalent approaches to lifelong-learning emphasise 'personalised education' and individual responsibility (Darling-Hammond, 2015; Hairon & Sing Chai, 2017; A. Hargreaves, 2012; Luna, 2015; Pavlova et al., 2017; Pei-Ling et al., 2017b, 2017a; Toh et al., 2014; Voogt & Pareja, 2012). This leads basically to the principle of 'student-centred' learning (which means that learning involves experience, participation, inquiry, imagery, digital tools, etc.) and 'self-directed' learning (i.e. the competence of leadership in learning process). Therefore, concepts such as learner's leadership, personalised learning, diversified curriculum and so on are becoming prevalent in most curriculum programs across educational institutions.

Relating how the learning process and curriculum are conceived in this account of life-long learning, we see the following features. To a great extent, it refers two dimensions of learning,

namely: (a) an 'individual' dimension (i.e. creativity, critical thinking, etc.) and (b) a 'social' dimension (ecological approach). More precisely, it focuses particularly on the 'relationship' of these two dimensions: individual and social, namely: collaboration, teamwork, partnership. This means that it emphasises, in fact, socialisation. It focuses mainly and overall on the social dimension. In other words, the prevalent that approach understands learning as aprocess of *socialisation*.

As a way of illustration, we can take Singapore, one of the leading countries of OECD. This country vividly adheres to the dominant framework of lifelong-learning (A. Hargreaves, 2012; Pavlova et al., 2017; Toh et al., 2014). This educational system aims to prepare young people for the 21st century. The implementation made over last two decades in Singapore is fundamentally looking to reinforce lifelong-learning competencies. In this regard, Singapore mirrors the current approach of education in the OECD and, therefore, it is working under prevalent assumptions on this matter. We can see, for instance, the new Programme in Service-Learning (Social Work) in the area of Social Science at Singapore (Hee Kiat et al., 2018). It is based on a pedagogical approach, namely, building ecosystems: collaboration (learning from the communities, in order to serve society) and community participation (in order to facilitate cross-sector guidance). At the bottom, Service-Learning is about learning values: empathy, compassion, love; it is about learning social wellbeing, social responsibility; to form attitudes, mindsets, behaviours. The key pedagogical question is how can learners learn these values. To answer this question, the ecosystem approach relies on the social dimension: social relationships, social experiences, the process of giving and receiving, make us better people. Learning is, then, as we see, a process of socialisation. This is a typical, paradigmatic example.

To sum up, a key feature of the prevalent approach to life-long learning is this: on one hand, the discourse emphasises a 'personalised education', highlighting principles such as student-centred approach, self-directed learning, creativity and innovation, diversified education and so on, on the other hand, when it comes to real life (as in academic programmes, practices and experiences), it addresses fundamentally the social dimension of human beings. Everything seems to be about collaboration, partnerships, teamwork, communication and so on. Put simply, the dominant approach to education over-emphasises the social dimension and accordingly diminishes the individual dimension. The basic question for education is, then, the following: is this approach of education adequate and convenient to face the social challenges of today?

This paper takes the inquiry. It shows first that current approach of life-long learning – as just outlined – fails to provide an adequate framework when it comes to achieve leadership, innovation and self-realisation. In other words, it is inadequate when it comes to face the main socio-cultural challenges of our time. Therefore, a different approach of education is required. The paper suggests then a different perspective for a personalised education. In doing so, it brings back key educational issues underlying Western education, namely: education is not only about 'building a work-force and citizenship education' (i.e. social dimension) but mainly and basically about 'personal education'. Finally, it indicates some clues about how this approach is more consistent in our time. The paper, in short, indicates that this suggested approach is more consistent when it comes to achieve the two aims of education in our time, namely, on the one hand, leadership and innovation, and, on the other, human flourishing, self-realisation, personalised education.

Leadership and innovation in the dominant paradigm of 'lifelong-learning'

The 1960 s brought to education a 'paradigm shift' for the leading countries of the OECD. In this process, we find two milestones. The first is the book *The Age of Discontinuity* (Drucker, 1969) by Peter Drucker. He portrayed the new world our societies were entering, characterised by an economic revolution, coined as the 'knowledge economy'. According to Drucker, the major labour-market force is, and will increasingly be, knowledge. Our societies will progressively move from a capital-based economy to a 'knowledge-based economy'. The logic of constant learning will then be essential to our economies. Economy will be based on learning organisations. Our societies are still in this paradigm; actually, it is gaining momentum day byday.

The question this situation poses to education is the following: how can our education systems adapt to this new world? To answer this query, we find the second milestone: the article *Teaching for competence rather than for 'intelligence'*, by David McClelland (1973). McClelland's work investigated the best predictor of professional excellence of outstanding professional performance. His work shows that 'competence' is a better predictor and a more adequate model to the kind of knowledge that professionalism, in this knowledge-based economy, requires. Yet this concept of competence rejects apparently 'intelligence', it is actually advocating for a concept of 'practical intelligence' against what is considered as 'academic intelligence'. In McClelland's account, 'competence' is skill, ability (it is «a personal trait or set of habits that leads to more effective or superior job performance» McClelland, 1973). It is therefore practical intelligence. More precisely, competence is the kind of ability that allows the learner (the practitioner) to perform more efficiently a practical activity. This ability is compounded by practical-knowledge, skills and practical values. All these aspects aim toward effective achievements. Competence is, in the concrete sense, the ability to be effective, to be productive. This approach to 'intelligence', in that account, seems to be more adequate, more useful at a professional level, particularly in a knowledge-based economy.

The OECD, to a great extent, follows this notion of 'competence'. In that line, the set of competences students needs for a changing world is labelled as 'lifelong learning' (OECD, 1996, 2004, 2005, 2015). In this trend, most of the leading educational institutions refer to the 21st Century Curriculum as 'lifelong learning' (Hairon & Sing Chai, 2017; Voogt & Pareja, 2012). The key point, for the purpose of this paper, is the following: this notion of competence embraces an underlying concept of intelligence (and, in the end, an anthropological view, i.e. related the conception of human development, human flourishing, self-realisation and so on); from that underlying idea, a particular model of education (i.e. educational aims, curriculum, learning process, pedagogical methods and so on) springs, as we see next.

From a semantic point of view – i.e. referring to the underlying conception of language and meaning – 'competence' is understood as practical-intelligence. It is the ability to perform effectively professional tasks. It is the kind of intelligence that works in professional realms. It addresses employability and productivity. In other words, the notion of 'competence' is tantamount to what traditionally is called as 'art' (i.e. mastering a practical ability to perform a professional task). What is new, then, in the concept of 'competence' in the framework of lifelong-learning? It seems to depend on the kind of knowledge, skills and values on which practice (i.e. learning and the professional realm) is based.

Traditional society (i.e. previous to this knowledge-based-economy) knew what professions would be in the future and what kind of knowledge should be required to that end. Then, education is just a process of 'application' of theoretical knowledge into a provided professional realm. It rests on aprioristic theoretical knowledge and conceives the learning process as derived from disciplinary knowledge, which is then applied to a professional activity. Therefore, in the traditional view, learning is just an instrumental action (i.e. learning provides the means to given aims).

However, a knowledge-based-economy brings a different world. Learners and practitioners are living in a world of volatility, uncertainty, complexity, ambiguity, which is particularly relevant when it comes to employability, professional knowledge, productivity, and consumer preferences. There is a rapid advancement of technology and evolution of knowledge; tech doubles every eleven months; knowledge, every 2 years. Therefore, for 66% of young people, the careers they are going to study do not exist yet; the knowledge and tech they are going to use in their work-life do not exist yet. In this context, therefore, the traditional view of learning does not work; it is ineffective for professional purposes. A different set of abilities is required, namely: lifelong learning competences.

Nevertheless, the main assumptions underlying traditional the view remain within the notion of competence, namely: competence is (i) a practical ability (ii) which consists of the 'application' of knowledge into a given-situation. It is still based on the two main assumptions: (1) application (of knowledge into a given-context) and (2) effective adaptation to a provided-task. This is – as we will see – relevant to conceive leadership and innovation.

From a logic standpoint – i.e. the internal structure of the notion – competence is an ability that embraces a multidimensional concept of intelligence, involving a wide range of knowledge, skills and values. More precisely, a competence is an intellectual ability that is used with practical purposes. The key issue here – in order to understand the internal structure of a competence – is not the distinction between the cognitive and the emotional level of intelligence, but between the intellectual stand (which embraces the cognitive level and the emotional one; i.e. Gardner & Goleman) and the practical applicability. To this end, the concept of competence involves skills that in the past were reserved for Higher Education: creativity, critical thinking, the big picture, etc., which, now, in this complex and volatile context, are considered 'useful' for practical purposes (i.e. to get effective adaptation in a complex world, in an uncertain future).

Methodologically speaking – i.e. the way to reach knowledge and achievements – competence basically consists of an 'application' of knowledge to a given situation. It conceives knowledge – critical thinking, creativity and innovation – as a process of 'application': ideas (either theoretical or imaginative) are applied to practice. It is then a problem-solving view. This includes: exploratory methods, learning from experience, learning by doing and making mistakes, critical thinking, etc.

Epistemologically speaking – i.e. relating the concept of knowledge – competence is the ability (i) to 'apply' knowledge into practice, (ii) in order to be 'effective' in a complex and volatile context. In other words, competence, from an epistemological point of view, is the ability to get an effective 'adaptation' in a given-context. This notion of learning process works then under the assumption of 'effectiveness': it looks for effective adaptation to a given-situation. This is basically a problem-based learning approach: finding new information, plus meta-cognitive skills such as critical thinking, in order to adapt to a provided framework. It is therefore a way to face productivity in a 'complex context and ever-changing future'.

Axiologically speaking – i.e. relating underlying values – this ability is driven by core values: knowledge-utility, effective performance, productivity (Brown, 2015; Pavlova et al., 2017) or employability. In the end, there is an economic pragmatism at work. In fact, the moral and socio-political values of inclusion and equity are included as aims of educational systems (UNESCO, 2016) for economic reasons: society cannot afford the cost of a high rate of unemployment; it is simply not sustainable. That is why the OECD's educational systems are adopting the principle of 'education for all'.

Summing up, in this knowledge-based-economy, in this complex and volatile world, a 'competent' worker should be able to surf upon the waves of uncertainty and ambiguity, in order to be effective. Therefore, a lifelong-learning approach is required. The aim remains the same: adaptation to given-tasks (organisational aims and procedures), adaptations to consumer preferences. And there is an anthropological framework underlying this model of education. An 'educated person' is able to adapt, effectively and efficiently, to consumer preferences; s/he is productive, s/he is useful-intelligent. S/he is driven by an economic pragmatism.

And the essential question for education is, still, the following: is this perspective adequate and convenient to face the social challenges of today and to meet the requirements of a personalised education?

The heart of personalised education

There are three metaphors when it comes to conceive the notion of 'formative change' that occurs in learning. First metaphor, mechanic model: learning is understood as a 'process'. Second metaphor, biological evolution: seminal capabilities inserted in nature 'evolve' or 'develop'. Third metaphor, human event: education comes from 'human initiative' and creates 'originality', innovation. These three metaphors refer to three different conceptions of reality: (1) reality as effectiveness, (2) reality as functionality and (3) reality as possibilities. (Zubiri, 1995).

Under the first metaphor, learning is understood as a 'process' of (mechanic) application of knowledge. This is the most common understanding of learning. We can see it in widespread tendencies across the world, particularly in the 'what works' approach (D. Hargreaves, 1996; Slavin, 2008) and the effectiveness view, a widespread tendency under labels such as effective teaching (Lloyd et al., 2015), effective classroom management (Egeberg et al., 2016) and community schools as effective strategies (Adams, 2010).

This trend understands life-long learning and, particularly, 'innovative leadership' under the assumption of effectiveness: a successful achievement of learning is understood as a process of effective adaptation to a given-context, in a problem-solving setting. However, as a matter of fact, in a complex and volatile world, the situation is not just a problem-solving activity, but a problem-*setting* activity too, because the problem to be addressed is not given beforehand, but must be delimited, synthesised, designed. That is what innovation and leadership is about.

From the perspective of learning as a mechanical process of the application of knowledge, innovation is understood as a 'process of adaptation' to given-contexts. Leadership is then led by a 'substantive rationality'. In the process of 'decision-making', as philosophy and methodology of science show (Simon, 1996, 2000), a 'substantive rationality' is determined by given-contexts; there is no distinction between the actual given-world and the decision-making process; there is therefore no room for real leadership, creativity and real innovation. Therefore, the assumption of effectiveness offers an inadequate solution when it comes to innovation. The assumption of learning as a 'mechanical process' gives an inconsistent solution when it comes to leadership.

The perspective of learning as mechanical process includes, for example, exploratory pedagogical methods, learning from experience, learning by doing and making mistakes, critical thinking, etc. These methods are indeed relevant to learning, but insufficient on their own. Exploratory methods and techniques, or iterative processes, lack an adequate methodology when it comes to innovation. We know by experience, for instance, that criticism on its own, when it has no idea underneath, leads nowhere and is sometimes useless for teamwork and for leadership. Furthermore, curiosity is also important, but also insufficient on its own. Curiosity is the first step; by itself, it is just a process of jumping from one thought to another, getting to no positive outcome. The same applies to exploration: significant but insufficient if it does not come with exploitation. The former requires expansion and playing joyfully with ideas. The latter demands concentration and focussing on a single idea (which sometime is neither joyful nor playful).

The second metaphor follows the model of the Natural Sciences. Learning consists of evolution, through which 'seminal' capabilities already inserted in the 'nature' of human being evolve or develop, according to the functionality of its biology. It works under the metaphor of Biology. This perspective underlies the dominant approach of the Psychology of Education. It conceives the process of learning as 'development' of psychological capabilities already inserted in the psychological nature of human being, namely: cognitive capabilities (from Piaget to Gardner), social capabilities (Vygotsky), and emotional capabilities (Goleman). It understands learning as a process of making capabilities to develop into abilities (i.e. skills-competences). Learning is then understood as the *development* of capabilities. In this account, the range of capabilities of the human being (i.e. cognitive competences, socio-emotional skills, etc.) is explained by the theory of evolution. Thus, the range of capabilities that human beings can develop is set in the 'nature' of the human being (Biological standpoint). Therefore, as capabilities are set biologically, scientific methods allow us to know the 'nature' of these capabilities. The notion of human intelligence is therefore the result of a Naturalistic methodology.

As a way of illustration, take Goleman's idea of Emotional Intelligence (Goleman, 1995, 1998). He has made a breakthrough in education. His view has impacted curriculum and the learning process across the world over the last decade. From a philosophical, scientific and methodological point of view, Goleman's idea of EI can be boiled down to the following aspects:

- Starting point: it 'describes' a situation or phenomenon such as increasing violence, which is indeed a big issue across the world.
- It 'interprets' this phenomenon as an 'emotional' issue. The phenomenon is reduced to a psychological dimension. Such a reduction is an interpretation, not scientific evidence.
- Upon that interpretation, it applies a scientific methodology (i.e. psychology of evolution, ethology). That scientific methodology produces an 'explanation' of this phenomenon, namely: Emotional Intelligence.

Therefore, Goleman's account is built upon a series of reductions (theoretical, scientific and methodological reductions):

- It reduces a phenomenon to psychology.
- It reduces psychology to the psychology of evolution and ethology.
- It reduces ethology to the emotional aspects.
- It reduces the emotional aspects to the brain.
- Summing up: 'I am my brain' (anthropological thesis).
- Application to Education: Emotional Intelligence.

What is new in Goleman's account of EI? Goleman states that he is bringing a 'new paradigm' to education. Before Goleman, he says, there was a paradigm-divide: intelligence versus emotions. Goleman breaks then with the 'past', he says. However, that statement is not the case. Emotional education has always been at the heart of education, from the very beginning of Western civilisation. Any single aspect Goleman relates to emotions (the five aspects: self-knowledge, control of emotions, … empathy) is already known in Western education, from Plato, Plutarc, Locke, Rousseau, … to this day. So the content is not new. Goleman just gives a different name to the same reality.

Is the idea of the learning process new? It certainly is not. Goleman's account is based on the idea of competence (McClelland, a concept of practical intelligence, practical ability to be developed), on Gardner's ideas (learning as exploring, etc.) and on previous educational experiences in school (alternative experiences).

What is, then, Goleman bringing to education? He adds two key points to education. First, he is pointing out a particular 'concept of education', namely: the ancient Eastern wisdom, particularly Zen approach to education. This is Goleman's 'novelty': recovering an 'ancient' tradition, which is actually older than Western tradition. Second, Goleman gives a 'scientific explanation' to an ancient tradition. He builds upon neuroscientific evidence, and, therefore, he gives a scientific explanation. That is what makes his proposal successful worldwide: a scientific basis that gives a kind of 'universal' explanation. That is the key to his international success. Summing up, Goleman offers a new explanation to old educational wisdom.

Educational research should take into account two key elements. First, EI (Emotional Intelligence) is an explanation based on a reductive scientific view. Second, universal explanations are abstract, general, and analytic. Regarding the first assumption (i.e. reductive scientific view), Goleman assumes that we are our brains and our brains are the product of evolution (survival of the fittest). For educational purposes, that is a very restrictive anthropological view. Scientifically speaking, it is exactly the scientific approach of the late XIX century, long ago criticised (see History of Science, Philosophy of Science, etc.). Therefore, we should be able to explore different perspectives. Regarding the second assumption (an analytic explanation of emotions), it works for general purposes. It avoids the socio-cultural dimension of human behaviour. This is a fundamental issue when it comes to education. Emotions are also socio-culturally based. In a human life, an emotion is not a 'stimulus' (impetus), but essentially an 'interpretative impulse' (impetus towards).

The key point is: would EI (and education of character) work 'better' under a different perspective? Would a different perspective be more adequate for education 'in our time'?

Summing up, Goleman conceives intelligence and learning competencies as the development of psychological capabilities. It is a case of the second metaphor. In this account, the process of learning (competencies, cognitive intelligence, emotional intelligence, moral education) is conceived as the 'development' of a set of 'given capabilities': cognition processes and socio-emotional skills that are already embedded in the 'nature-biology' of intelligence. Therefore, teachers, researchers, and policymakers already know 'what capabilities' any given student brings and their job is to 'develop' them. Under that view, the concepts of leadership and innovation in education are limited by innate nature, a nature of a biological character. A restrictive concept of leadership and innovation emanates. We already 'know' the range of talents that a student is able to develop. We do not know 'how much' they will be able to optimise them, but 'what sort of talents' they are going to develop is a given. Thus, learning is just a process of 'optimising' innate talents.

In conclusion, the notion of learning as 'development' is based on a particular perspective about what human nature (intelligence) is about. That conception of intelligence leads us to a reductive framework of leadership and innovation. Consequently, a different anthropological perspective will lead us to a different perspective of education and, thereby, to a different perspective of innovation and leadership.

In the third metaphor, learning is a type of creation. Learning is essentially an innovative event, which rises from latent and patent possibilities and it is created by human design. This perspective, therefore, highlights human initiative, innovation and personalisation. From my point of view, the idea of learning that springs from this metaphor is the one that properly reinforces a 'personalised' education. To get there, our search needs to trace the inquiry on learning back to the very beginning, namely, what is the purpose of education?; why should we learn?; more precisely, why do we need to learn?

We basically find two governing answers to this question in today's education. The first is coined as the 'traditional approach' to education. It is based on a basic supposition: humans are 'homo sapiens'. The human being tends 'naturally' to knowledge. Curiosity is the source for learning and curriculum. Knowledge is delivered at educational institutions. This is an academic approach. The second approach is utilitarianism. Knowledge is useful and education gives competences in order to have control of things. Practical utility, the applicability of knowledge, is then the aim of learning and curriculum. This approach is in force in the OECD.

There is however a different approach, which underlies main education perspectives of the West, yet has fallen into oblivion in our time. Education, in this perspective, is not fundamentally about 'packs of information', nor is it basically about 'emotions', nor is it essentially about 'morality'. By contrast, education is, basically and fundamentally, about 'life', it is about 'waking-up', about 'originality and authenticity'; it is, in the end, about 'creation', or, in today's words: human flourishing and self-realisation. In this perspective, we need to learn because it is a necessity to 'our own life'.

Relating the way to understand the idea of 'education for life', most contemporary approaches to education follow Dewey's account. Dewey is a prominent author in this regard. I follow, nonetheless, a tradition of Spanish philosophers that, as I strongly feel, is more consistent and adequate to this purpose of education (i.e. education under the metaphor of creation), namely the line from José Ortega-Gasset to Julián Marías [1]. This philosophical account helps us to understand education from the perspective of 'genuine innovation'. In outline, the guideline of this perspective is as follows (Ortega y Gasset, 1947).

First, we – human beings – are already living in a given-world. We inherit a world. We share opinions, beliefs and ideas of a given-world. This is, in the end, culture and socialisation; and this is also pseudo-beliefs and set-ideas, sometimes very ingeniously put and intellectually very powerful.

Second, we feel at some point that we get lost: we do not know what our own beliefs, opinions, ideas about the world are; we do not know what we genuinely think and what to do. We feel lost living in the middle of a culture, with plenty of scientific knowledge, plenty of 'things' (including

technology). We have different terms to refer to this situation: social extremism, disorientation, depression, or embedding common-ideas as a form of alcoholism (Ortega's term).

Third, in this situation, we tend to know because our own life depends on it. Searching for knowledge is a matter of achieving authenticity. It is not just a frivolity (curiosity). It is not just a matter of getting control over things (utilitarianism).

Fourth, our life is not made for knowledge, but, nonetheless, in knowledge, we find a powerful 'tool' for our life. In other words, our life is not made for the use of the intellectual level of our mind, but, in the use of our intelligence, we find a powerful 'tool' for our life.

Fifth, and most notable, in order for us to live properly, we need to think properly, we need to know. Then, knowledge and intelligence are deeply and authentically rooted in our own life. This is what self-realisation is about.

Sixth, and crucially, what we firmly think and what we firmly believe is an inherent element of our own life, of our own destiny. Then, we can conclude, education is an inevitable part of our life, of our destiny.

Although these authors do not bring out the implications for education, the underlying understanding that flows from this philosophical perspective is this: education is basically 'waking-up' and 'staying awake', which links with the heart of Western education. (Actually, this understanding of education – as waking-up and staying-awake – belongs also to the heart of Eastern perspectives. This paper focuses nonetheless on the former.)

We find a set of core notes that compound the heart of education in the West (studied in earlier works: Penalva, 2003, 2006, 2008). In short, the starting point of education, in this long and broad perspective, is the following aim: education addresses basically and fundamentally 'personal freedom', 'authenticity', 'quality-of-human-being'. Authenticity, a term which summarises all these concepts, is essentially based on the personal, individual dimension of the human being, and not fundamentally in the social dimension. In other words, socio-economic-political freedom and innovation spring from – and it is built upon – personal freedom; culture springs from – and it is built upon – authenticity.

Then, educators essentially educate the human as a holistic being, not just either the worker and/or the citizen. Education essentially consists of giving the learner the possibility to flourish, self-realise, and bring out all his/her potentiality. Most fundamentally, education has to offer the learner, basically and fundamentally, 'possibilities' (for children and youngsters to be able to be free). This is the essential task of parents, teachers and mentors.

At the heart, education addresses fundamentally nurturing the possibilities that allow the learner to achieve 'authenticity'. Authenticity means the possibility to create his/her own life, to be a leader of his/her own life, to innovate, and to offer something original and authentic to the world. This is a true personalised education. Education looks primarily for the 'quality' of human beings we are trying to build, not only for the quantity of knowledge that it is in culture and society. The individual dimension of the human being is what 'fundamentally and primarily' matters in education. It is about how to give children and youth 'possibility' to be 'authentic persons'. Building personal authenticity is the condition of possibility for creation, for innovation. This endeavour is the heart of education.

This is what 'education of character' or 'education of virtue' is about, as per Classics of education (Penalva, 2003). Contrary to what the prevalent approach of education depict, it is not primarily about 'citizenship education'. In the core of the Western perspective, education does not primarily address to build workers or citizens but 'quality-men', 'character', 'virtue'. 'Virtue' is essentially an 'educational' word. Virtue is not just education of emotions or moral values; it is about how to give children and youth the possibility to be authentic people. To this end, the core of education is basically this: 'how one person can *desire* to be better and to do better' – a big issue across the history of education; most educational traditions interpreted this question as how to be 'good'; few have focused on how to be 'better' (Marías, 1996), an interpretation to which I feel more devoted for education.

The key issue *beneath* topics and contents of curriculum is etymologically what 'encyclopaedic' means: in-cycle-paideia, i.e. the key essential elements of curriculum and learning we need to think about. The key elements are neither cognitive, emotional nor moral contents, but, primarily and fundamentally, 'possibilities' that enable the learner to achieve authenticity.

In conclusion, essentially, education does not basically consist of 'how-to-learn' ('learning to learn', as the dominant approach of life-long learning states today). It primarily consists of 'what to learn', namely 'character education': what is the character that builds potential to be an authentic person?

Implications

Most educational accounts of today tell us that education and leadership are about 'passion'. However, education and leadership require also 'clarity' of mind. Many times we see that even with an intense passion, we can be mistaken and may have taken the wrong path. Then, an 'alert life' ('waking-up' and 'staying awake') is adequate and convenient, along with passion. Furthermore, key concept of education and leadership is courage. If we really feel love for knowledge (which is the heart of education; in the Classics of education, it is what 'eros' and 'philo-autía' are about), then we confront difficulties, we are not afraid and we dare to face reality. This is, in the end, what education and leadership are about: daring. This is character. And, at the end of the day, this is a personal, individual endeavour.

This matter is particularly significant to education today. The new generation, GenZ, seems to appreciate truth, transparency, and mobilising for a variety of causes (Francis & Hoefel, 2018). But how, for example, are we to interpret the phenomenon of demonstrations of young protesters across the world? There seems to be a common key factor in all of them: they want their voices to be heard, they have a view of what democracy is about; then, they disagree with predominant forms of Governance (Castells, 2019). Are we then not in a new time? Moreover, take, for instance, this tendency in tertiary education: students see learning, to a great extent, as a path to self-realisation; they want to leave school confident that they can go on in life, but they take the degree in a larger sense of human development. They want to work first and later get a degree, or a work-and-learn path, etc. (Shanmugaratnam, 2017b). It seems, then, that human flourishing is particularly relevant to this new generation. Therefore, education must react accordingly. We need an adequate personalised education to develop everyone's potential.

It seems as if we are not just in a new generation (the so-called Generation Z) but also in a new time, a new era. In this regard, it seems as if 'art', i.e. literature, movies, new social-media forms, etc., is describing 'the feeling' of this new era. Since 2013, there are a large number of films portraying zombies, the walking-dead, gloomy sceneries, nature going backwards to its primitive state, etc. This means, to this new generation, the past is dead. The current inherited culture means nothing to them; they live in a different world. They then, as art shows as well, turn to nature in its primitive state: the source from which to reinvent the world; they run across history, from present to past and to future, and back, reinventing the world. They claim for their own talent, for their own flourishing as a unique, personalised endeavour. There is a flood of talent-shows, everywhere. Take, as a way of illustration, the film 'Incredibles 2': the little boy mirrors what talent is about for this new generation; nobody knows the talents of the little boy; even more: nobody knew he had 'latent' powers; and nobody knows how much and how many powers he has. We see these powers appearing depending on experiences, events, and situations. Does it not mirror the idea of intelligence as talent, and talent as 'waking-up' (latent talents)? In short, it seems as if art is describing the spirit of the time. But that feeling must go through 'theory': we need to put forward the anthropological implications, as previous sections have indicated. And the question still remains: is education offering an adequate solution to our time?

Each human being brings a new, different way to address reality, to see the world, to face life. This is the starting point of a genuine education, as the Western perspective of education shows.

This issue seems to be the key factor of education in our time, to this new generation – as just noted. At the same time, there are nowadays a flood of so-called scientific ideas that consist of reducing human actions and human personality to a sum of biological rhythms, neurological impulses, psychological patterns and socio-political topics. We have seen above a sum of them. These ideas – which come under the name of scientific research and democratic mottos – seriously influence education and pedagogy across the world. Under this influence, learners, workers and citizens are nothing but bricks to be 'adapted' to dominant curriculum, organisations' and nations' aims, and, in the end, to the mainstream.

Those who do not follow the lead are 'non-adapted', 'non-emotionally competent', 'problematic citizens', and are sent back to re-educationto the convenient expert. There is a flood of them nowadays, many with 'scientific ideas' and 'democratic mottos'. Schooling becomes then the process of 'fixing' the child in the masses, 'adapting' the child to the mainstream. The process of socialisation becomes a series of pressures – most of the time very beautifully put, according to the spirit of the time, dressed with scientific and democratic terms – that limit and kill personal callings, genuine capabilities and the possibility to create something new. In other words, it kills the chance for authenticity, real innovation and leadership.

Every human being brings a new way to address reality, see the world, and face life. This is the starting point of a genuine education. By contrast, the opposite tendency seems to prevail today. This tendency increasingly intrudes on private life and the personal dimension of human beings. It consists of injecting, at the very bottom of learners' intelligence, a belief, namely: 'there is robust scientific evidence and a sum of democratic reasons for you to give up, for not trying, for not daring'. It prevents people to be free, original, authentic, and innovative.

This is, I believe, the most refined form of oppression, which results in serious and complex social issues. This oppression comes today under the name of science and democracy. Put simply: pseudo-science and pseudo-democracy, but – this is the key point – they appear as benevolent and harmless as Little Red Riding Hood's grandmother.

In this context, a personalised education is vital. Education must give the learner 'possibilities' to be free, to be authentic. We must remember that education is, essentially, 'waking up' and 'staying awake'. This idea is in fact within the core of both Western and Eastern tradition: the reality of waking-up and staying awake occurs, mainly and foremost, at an individual level, in our private life. Life, obviously, happens in a social context. Nonetheless, 'the possibility' to achieve an authentic life in society depends, essentially, on something that happens at an individual level and in private life. This 'retreat from the world' (this is a metaphor) gives the learner, the human being, actual possibility to achieve authenticity. Then, s/he can be authentic, then can innovate and be the leader of his/her life. In this sense, education starts as a 'retreat from the world' (again, a metaphor). This reality – this metaphor – is basic in main accounts of education in history, in the West. This reality, nonetheless, has been forgotten in education nowadays. To a great extent, it has been buried under the idea of 'socialisation' and 'citizenship education'.

To justify the concept of education as primarily and fundamentally aprocess of socialisation and, then, citizenship as apriority value of education, numerous towering figures, particularly within the perspective of Critical Pedagogy and Philosophy of Education [2], explicitly oppose to Rousseau and the idea of 'noble savage'. They assume, consciously or not, a well-established misunderstanding, which is worth clarifying.

Contrary to what most educationalists believe, Rousseau is in fact digging into the basic questions of education, in line with Western perspective, which go back to Plato and Aristotle (Penalva, 2006). In the core of the Western perspective, there are – basically and fundamentally – two pedagogical models, which are opposed at heart: freedom or barbarism; two curricula: alive-culture or dead-culture. There are basically two educational models: education for life or education for the masses. In this context, Rousseau is trying to revitalise the core educational question of Modern society: how can education preserve the authentic nature of the child, in Modern society?In Rousseau's account, education addresses these core aims: 'authenticity', 'originality' and 'feelings'.

The key contribution Rousseau makes to education is the following: in order for educators to teach authenticity and originality, learning should address a particular dimension of the mind which is beneath the intellectual – either cognitive or emotional – level, namely: feeling. Feeling is not just about emotion but, basically, about a particular personal 'way' or 'form' that any child holds when s/he addresses reality. It is a 'way to address reality', not an emotion. In other words: a particular mind sounds in a particular 'tone' when it faces reality. That particular tone that any mind holds is precisely what makes each human being unique, original, and authentic (Penalva, 2008). Rousseau names that aspect as 'nature', which rests in the 'heart'. Then, 'nature' and 'heart' are – in Rousseau's account – the source of originality and authenticity. According to Rousseau, education must address 'nature' or 'heart'. Education must face this level of the mind which is beyond cognition and emotions. This supports reason and emotions, and offers the possibility for authenticity. Education of nature and education of the heart are equivalent terms, in Rousseau's work.

In pedagogical terms, the question is: how can we nurture the 'nature' of this particular child? That is the key point of education. According to Rousseau, educators teach children 'healthy' ways for them to strengthen their nature, i.e. his heart. Strengthening the heart – this is what education is about – is about how we give children the 'possibility' to become authentic ('to remain in its nature', in Rousseau's words). Then, the million-dollar question: how do we teach children to be authentic? To illustrate, Rousseau gives us an image: Emile's education. He starts in the very cradle, with basic values such as joviality, joy of life, or, in other words, feeding the heart, something which occurs in family life. In other words, educating the individual dimension in private life (avoiding the dead-culture, in Rousseau's term). This private context provides the children the right 'food' to enable them to strengthen the natural being, the heart, his/her authenticity. That is why Rousseau makes constant reference to life at the countryside, apart from growing cities (or the 'dead-culture'), since he wrote at the beginning of the industrial era, when cities were growing.

In this very context, Rousseau refers to the image of Robinson Crusoe. He offers a metaphor, a myth, for us to understand the core of education. Rousseau confronts 'nature' versus 'society', meaning: alive-culture versus dead-culture, or education for life versus education for the mass. And then Rousseau asks: how can we give children 'alive-culture'? This is the purpose of education, in all times. In Rousseau, alive-culture is precisely what nurtures children's authenticity. Therefore, Rousseau is not trying to keep children apart from society, but trying to preserve children from prejudices of the mass and common opinion. He poses Classic questions like how can we preserve children from 'dead-culture', from influences that poison the children? How can we teach children to be authentic? This is the basic aimof education. Therefore, Rousseau does not state that we should bring children out of society. Rather, he uses the metaphor *retreat from the world* to teach us that education must offer children actual possibility to achieve authenticity, leadership, innovation, or, in today's term, self-realisation. Without this 'possibility', curriculum is just a way to fix the children into the masses, to adapt them to things (as the market).

This is then, at heart, a critical pedagogy. And, if I might ask to the current trend of Critical Pedagogy: Is this not a more fundamental view of critical pedagogy than the current one?

Summing up, in our time, we need an adequate perspective of personalised education. To this end, history, and in particular Western tradition, offer an essential contribution. We still do not have a new framework. It will have to spring from a situational context. However, as this paper suggests, the new situational framework will have to deal with key educational issues and questions, those which are deep-rooted in history, set up by great thinkers and experience. It will have to bring out a new interpretation of key questions, in accordance with the present time. In short, it will have to revitalise Classic key educational questions. This way, we see that the historical dimension of life offers 'possibilities' to education. It enables us to build innovative perspectives. Innovative pedagogy is not only about learning from 'successful experiences' across the world and 'borrowing' them, as current education policy does nowadays. The historical dimension is a crucial source of new possibilities for education. The future is not built yet. Neither is the present nor the past. The

past is still to build: finding forgotten routes, possibilities, etc. This is also what authenticity, innovation and leadership are about.

This paper's theoretical approach is not 'pure' philosophy or just 'speculation'. It has practical, useful implications to the real, complex and volatile world. Therefore, to conclude, the paper will touch on an ongoing line of research that follows the perspective of personalised education this paper puts forward, as per the third metaphor above mentioned. This line of research reinforces innovation, leadership and self-realisation. It is complementary to the ecological approach to education, global in force, which highlights the social dimension, as seen above. It is education research from the perspective of the Science of Design along with Rationality of Action (SCD&RAC).

Outlook

Contemporary approaches of education conceive creativity basically as a process of 'application', namely: ideas, theoretical or imaginative, are put into practice (Davies et al., 2012). This is, for instance, the underlying approach of one of the leading, and most popular, authors on creativity (Robinson, 1999, 2015, 2017). He understands imagination as the power (capability) to bring into the mind things that are not present to our senses. Creativity is defined as the process of putting imagination into a work. This process is conceived as 'application' of imagination into practice. It is imagination addressing a given circumstance. It is imagination applied to a given-context: to tackle a problem, to conceive an alternative, to invent a process, etc. Innovation is defined as putting ideas into practice. It is conceived, again, as a process of application. In the end, what idea of learning process underlies that conception of creativity? In outline, learning is conceived as exploring by doing: including pedagogical techniques such as exploratory methods, learning from experience, learning by doing and making mistakes and so on. The learning process then becomes a problem-solving practice, focuses on a given-context and specified-ends (learning as effective adaptation to the context).

To illustrate, consider a clear-cut prototype of this prevalent approach to creativity: Brown's 'entrepreneurial learner model' (Brown, 2006, 2012, 2015). If we bring out the theoretical assumptions of this model, we find the following aspects. Axiologically speaking, lifelong-learning is driven by a key value: consumer preferences and productivity, issues that are complex and volatile in the 21st century. Scientifically and methodologically speaking, how is Brown's learning model built? It starts with a description of the world: the world is changing, complex and volatile. From that description, he makes a prescription (about what the learning process should be): learning is 'exploration' (i.e. knowing as playing and making). In other words: as the world is complex and volatile (description), learning should be exploration (prescription). This model is then based on a methodological jump: from a descriptive methodology (the world is changing, complex and volatile), he jumps to a prescriptive proposition: learning should be 'exploration'. There is a 'latent' assumption working within that jump: as the world is changing (description), then learners need to achieve *effective adaptations to the context* (assumption) by away of explorations (prescription). Therefore, this account understands creativity as effective adaptation to provided context.

Pedagogically, although he refers to a set of skills (leadership, teamwork, critical thinking, etc.), the ability of imagination plays a leading role in the lifelong-learning process. Learning is thus: 'playing' with knowledge, and satisfying curiosity. Therefore, this model is lead by an intuitive epistemology. In particular, Brown proposes some pedagogical techniques or practices (which are very much in line with lifelong-learning): practice-based learning, real work based, problem-solved based, collaboration. These practices are based on the idea of exploring, imagination and, then, grounded upon an intuitive epistemology. Even though these practices are referred to as 'innovative pedagogies', they work under the assumption of effective adaptation to given-contexts. It is then sustained upon a substantive rationality: in the process of 'decision-making', a 'substantive rationality' – worth to reiterate – is determined by given-contexts; there is then no distinction between the

given-world and the decision-making process; there is therefore no room for real creativity and real innovation.

Summing up, Brown proposes: lifelong-learning is fundamentally based on the idea of leadership, which is conceived as independent learning, which in turn consists of satisfying curiosity on its own, which is named creativity. Put simply: lifelong-learning is essentially 'exploration'. Learning is conceived as exploring by doing, where creativity is governed by an 'intuitive' epistemological stand.

This idea of creativity is prevalent in education research at present. Therefore, we could display a long list of authors who are assuming that very concept of creativity.

By contrast, from the perspective of the Science of the Design and the Rationality of Action (SCD&RAC, Penalva, 2011, 2019a), the role that imagination, creativity and innovation play in learning connects in a more useful way with the aim of a personalised education.

Under the prevalent view, imagination, creativity and innovation (in short, ideas) are understood as 'development' of psychological capabilities, namely: cognitive capabilities, social capabilities, emotional capabilities. What are these capabilities? We have already seen it in previous sections, within the second metaphor. Under that view, the notion of human intelligence is the outcome of a Naturalistic methodology. From that view, a restrictive concept of leadership and innovation emanates. However, if we balance such a paradigm against the framework that SCD&RAC brings out, we can reinforce individual responsibility in the process of creating knowledge. Then, we could achieve a more consistent conception of personalised education.

According to SCD&RAC, imagination is a 'capability' that every human being brings out. It is based on the originality and authenticity of each individual person. This is the source of talent. That is why every talent is unique. Every human being brings a unique perspective. This source of possibilities develops into abilities and skills through the learning process.

Imagination brings a new perspective to this world. Imagination is not only the capability to bring into mind things that are not present to our senses, as Robinson states, but also the capability to see, in a different way, things that are present to our senses, and the capability to see, in a different way, things that are in our mind (knowledge, memories, traditions, etc.).

Creativity is the ability to design 'what might be'. It deals with the design and creation of new things. 'New' means the design of both (a) new meaning, alternative views, ideas, scenarios, worlds and (b) the practical process of its development or achievement.

Innovation involves action in order to reach 'what should be'. It essentially looks to improve and get beyond a given situation. Innovation does not essentially stem from 'what it is' (i.e. the projected situation) and it does not fundamentally look for effective adaptation to forecasted situations. It looks for 'what ought to be'. It proposes both (a) new aims, new worlds and (b) practical alternatives (including the viability) to achieve its aims.

Then, under this new approach, learning looks for 'building' not just 'competence' conceived as 'practical intelligence', but a different concept of intelligence. This perspective assumes a new, particular concept of intelligence, which flows precisely from the third metaphor of personalised education. At the same time, the idea of learning as design reinforces 'personalised' education. It offers solid ground to conceive learners as leaders and agents for change. Therefore, this suggested approach is more consistent when it comes to achieve the two aims of education in our time, namely, on the one hand, leadership and innovation, and, on the other, human flourishing, self-realisation, and personalised education.

This approach is more useful for the learner (either children, youth or lifelong learners), but it is also more useful for our society, even for our own sustainability. Societies are entering a very complicated time. The problems this new generation are facing are complex: societies getting older, global security, AI and tech, climate change, etc., including issues referred in the previous section, that globalise quickly. We do not know how to face them. We need the new generation to be able to find a solution for these problems. We need them to innovate. Our future depends on them.

Notes

1. José Ortega-Gasset is a well-known Spanish philosopher. Ortega's work and life have many facets. From my point of view, the authentic interpretation comes from Julián Marías; that's why I always use this term: 'Ortega-Marías philosophical tradition'.

   In late-XIX, beginning-XX Century, some thinkers faced the two main shortcomings in Modern philosophy, namely: positivism and idealism. The starting point for those authors is neither subjectivity nor rationality, as per Modern philosophy, but something beyond. For instance, for Husserl, it is be the problem of 'the world of life', although, in the end, he'll take the path of rationality, again. For Jasper, it'll be the realm of 'relationships'; for Heidegger, the sphere of 'the being'; for Levinas, 'the otherness'.

   Ortega developed this line of thought in early-XX, before Heidegger, and took a different path, too. For Miguel de Unamuno, Ortega's previous generation Spanish philosopher, our priority is not rationality, but life ('I am not my rationality but my life'), and, as a reaction, he fiercely avoids rationality. For Ortega-Marías, it is also 'life', but, contrary to Unamuno, it includes rationality as a relevant 'tool' for life. In short, for Ortega-Marías, life (my own life), per se, exerts might. In other words, it is not the fact that humans are already within 'the being' (Heidegger), but in life (my life), the structure of life (which has nothing to do with the theory of structuralism). Later on, Zubiri, also a Spanish philosopher, will elaborate on 'reality'. (cf. Penalva, 2019b).
2. From thinkers such as Dewey to educational programmes such as History of Curriculum – Kliebard, Goodson, Popkewitz, Giroux, Apple –, or educational theories such as the Social Construction of the School – Young, Beck, Bowles-Gintis, Jackson, Eggleston, Moore-Muller –, including a vast, boundless literature in Philosophy of Education relying on Post-Modern authors. It is beyond the scope of this paper to quote them all. I have developed this point in previous work: Penalva (2006).

Disclosure statement

No potential conflict of interest was reported by the author.

Notes on contributor

Jose Penalva has a rounded experience through practice, research and policy in Education and Learning Organizations as a teacher, researcher and lecturer in some of the best international universities, as well as through his roles as mentor, advisor to policymakers, independent consultant, and author.He is passionate about personalized education and follows a humanistic approach, namely: skills are relevant but foremost are talent and character for life-long learning. He has created a distinctive line of research which boosts innovation in any single area of education systems and learning organizations, and particularly reinforces teacher education and professional development (TE&PD).His international perspective within the framework of 21st Century Education ingrains a multidisciplinary approach spanning: Methodology of Social Science, TE&PD, Educational Studies, Innovative Leadership, Teaching and Learning, Innovative Curriculum Design, Philosophy and Methodology of the Science of Education, History of Education, Literature, Mass Media and Communication.

References

Adams, C. M. (2010). *The community school effect: Evidence from an evaluation of the Tulsa area community school initiative*. The Oklahoma Center for Educational Policy, University of Oklahoma.

Brown, J. S. (2006). *New learning environment for the 21st century: Exploring the edge*. Retrieved from http://www.johnseelybrown.com/

Brown, J. S. (2012). *Symposium and public lecturer. Learning in and for the 21st century*. CJ Koh Professorial Lecture Series n. 4. NIE. http://www.johnseelybrown.com/CJKoh.pdf

Brown, J. S. (2015) *Cultivating the entrepreneurial learner in the 21st Century*. Retrieved from http://johnseelybrown.com/el.pdf

Castells, M. (2019). *Manuel Castells en el CEP (Chile)*. Retrieved from https://www.youtube.com/watch?v=h97emCUyMf0

Darling-Hammond, L. (2015). New learning for a rapidly changing world. In *Symposiium: Thinking big about learning*. https://www.youtube.com/watch?v=f14g0OG4mz0

Davies, D., Jindal-Snape, D., Collier, C., Digby, R., Hay, P., & Howe, A. (2012). *Creative learning environments in education: A systematic literature review*. Thinking Skills and Creativity. http://www.elsevier.com/locate/tsc

Drucker, P. (1969). *The age of discontinuity*. Butterworth-Heinemann.

Egeberg, H. M., McConney, A., & Price, A. (2016). Classroom management and national professional standards for teachers: A review of the literature on theory and practice. *Australian Journal of Teacher Education*, *41*(7), 1–18. https://doi.org/10.14221/ajte.2016v41n7.1
Francis, T., & Hoefel, F. (2018, November). *'True Gen': Generation Z and its implications for companies*. McKinsey. https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/true-gen-generation-z-and-its-implications-for-companies
Goleman, D. (1995). *Emotional Intelligence*. Bantam Books.
Goleman, D. (1998). *Working with emotional intelligence*. Bantam Books.
Hairon, S., & Sing Chai, C. (2017). The learning revolution: From pedagogues to designers of learning. Learning: Research and Practice, 3(2), 79-84. https://doi.org/10.1080/23735082.2017.1360631
Hargreaves, A. (2012). The fourth way. In *Paving the fourth way: The Singapore Story*. NIE. Retreived from: http://hdl.handle.net/10497/4628
Hargreaves, D. (1996). *Teaching as a research-based profession: Possibilities and prospects. Teacher training agency annual lecture*. Teacher Training Agency.
Hee Kiat, C., Chuan-Jin, T., & Wei Leong, G. (2018). *UG programme in service-learning, social science faculty*. Singapore University. https://www.youtube.com/watch?v=P1hllLxr9Nk
Jones, S., & Harvey, M., eds. (2017). Leading the Academy: Building capacity through distributed leadership. *Journal of Higher Education, Policy and Management, 39*(2), 126-139 . https://doi.org/10.1080/1360080X.2017.1276661
Lazer, D. M., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F., Metzger, M. J., Nyhan, B., Pennycook, G., Rothschild, D., Schudson, M., Sloman, S. A., Sunstein, C. R., Thorson, E. A., Watts, D. J., & Zittrain, J. L. (2018, March 9). The science of fake news. *Science*, *359*(6380), 1094–1096. https://doi.org/10.1126/science.aao2998
Lloyd, N. J., Lewthwaite, B. E., Osborne, B., & Boon, H. J. (2015). Effective Teaching Practices for Aboriginal and Torres Strait Islander Students: A Review of the Literature. Australian Journal of Teacher Education, 40(11). https://doi.org/10.14221/ajte.2015v40n11.1
Luna, C. (2015). *What king of pedagogies for the 21st century? Education research and foresight 15*. UNESCO. http://unesdoc.unesco.org/images/0024/002431/243126e.pdf
Marías, J. (1996). *Tratado de lo mejor*. Alianza.
Markovitz, D. (2019). *The meritocracy trap*. PRH, NY.
McClelland, D. (1973, January). *Teaching for competence rather than for 'intelligence'*. American Psychologist.
McKindsey&Company. (2017). *Technology, jobs, and the future of work*. McKinsey Global Institute. mckinsey.com/mgi
McKindsey&Company. (2018). *Superstars. The dynamics of firms, sectors and cities leading the global economy*. McKinsey Global Institute. mckinsey.com/mgi
McKindsey&Company. (2019). *Globalization in transition: The future of trade and value chains*. McKinsey Global Institute. mckinsey.com/mgi
McKindsey&Company. (2020). *The social contract in the 21st century*. McKinsey Global Institute. mckinsey.com/mgi
OECD. (1996). *Lifelong learning for all*.
OECD. (2004). *Lifelong learning. Policy brief*.
OECD. (2005). *Measuring the social outcomes of learning*.
OECD. (2015). *Education policy outlook 2015: Making reforms happen*.
Ortega y Gasset, J. (1947). *En torno a Galileo*. OC VI. Lección VII: «La verdad como coincidencia del hombre consigo mismo» 432.
Pavlova, M., Chi-Kin, J., & Maclean, R. (2017). Complexities of school to work transitions. *Educational Research for Policy and Practice*, *16*(1), 1–7. https://doi.org/10.1007/s10671-017-9211-5
Pei-Ling, J., Choo, S., Kang, T., & Arief, G. (2017b). Education for twenty-first century competences and future-ready learners: Research perspective from Singapore. *Asia Pacific Journal of Education*, *37* (4), 425-436. https://doi.org/10.1080/02188791.2017.1405475
Pei-Ling, J., Koh, E., Chan, M., Costes-Onishi, P., & Hung, D. (2017a). *Advancing 21st century competences in Singapore. Center for global education*. Asia Society.
Penalva, J. (2003). *Foundations for teacher's identity and teacher's action* [Doctoral dissertation]. MEC, Madrid.
Penalva, J. (2006). *Teacher as a moral educator*. PPC. Portuguese translation: *O professor como formador moral* (Brazil 2008).
Penalva, J. (2008). *On education in our society and the school of today*. BN.
Penalva, J. (2011). The role of explanations and prescriptions in the science of the design: The case of educational research. *European Educational Research Journal*, *10*(2), 2011. https://doi.org/10.2304/eerj.2011.10.2.272
Penalva, J. (2019a). Contemporary methodological perspectives in educational research on 'teacher's practice': Assumptions and shortcoming for 'effective practices'. *European Educational Research Journal*, *18*(4), 461–482. https://doi.org/10.1177/1474904119830902
Penalva, J. (2019b). Juan Ramón Jiménez: The inglorious who write 'god' in small letter. *Ibero-American Journal of Linguistics*, *14*, 151-161.

Robinson, K. (1999). *All our futures: Creativity, culture and education*. National Advisory Committee on Creativity and Cultural Education. http://sirkenrobinson.com/pdf/allourfutures.pdf

Robinson, K. (2015). *How to build a culture of innovation*. Retrieved from https://www.youtube.com/watch?v=zABwof_oYrw

Robinson, K. (2017). *What is creativity education*. Retrieved from https://www.youtube.com/watch?v=X1c3M6upOXA

Shanmugaratnam, T. (2017a). *Inclusive prosperity: Making it possible*. LSE Event. https://www.youtube.com/watch?v=mQmpcuCP-hc

Shanmugaratnam, T. (2017b). *Inclusive prosperity: Making it possible*. Deutsche Bundesbank. Frankfurt. https://www.youtube.com/watch?v=y_mYE_9jQok&t=236s

Simon, H. A. (1996). *The sciences of the artificial* (3ª ed.). The MIT Press.

Simon, H. A. (2000). Bounded rationality in social science: Today and tomorrow. *Mind and Society*, *1*(1), 25–39. https://doi.org/10.1007/BF02512227

Slavin, R. E. (2008). Perspectives on evidence-based research in education what works? Issues in synthesizing educational program evaluations. *Educational Researcher*, *37*(1), 5–14. https://doi.org/10.3102/0013189X08314117

Stokes, B. (2017). *Public divided on prospects for the next generation. Global attitudes & trends*. Pew Research Center. http://www.pewglobal.org/2017/06/05/2-public-divided-on-prospects-for-the-next-generation

The Economist. (2018, September 15). *A manifesto*, 11–12.

Toh, Y., Jamaludin, A., Hung, D., & Meng-Huat, P. (2014). Ecological leadership: Going beyond system leadership for diffusing school-based innovations in the crucible of change for 21st century learning. *The Asia-Pacific Education Researcher*, *23*(4), 835–850. https://doi.org/10.1007/s40299-014-0211-4

UNESCO. (2016). *Education 2030. Incheon declaration. Towards inclusive and equitable quality education and lifelong learning for all*. Retrieve from http://unesdoc.unesco.org/images/0024/002456/245656E.pdf

Voogt, J., & Pareja, N. (2012). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. *Journal of Curriculum Studies*, *44*(3), 299–321. https://doi.org/10.1080/00220272.2012.668938

Zubiri, X. (1995). *La estructura dinámica de la realidad* (2ª ed ed.). Alianza.

Zucman, G. (2019). *Global wealth inequality*. The Annual review of Economics. https://doi.org/10.1146/annurev-economics-080218-025852